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10/573,914

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Jani Moilanen

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7590

02/10/2009

SQUIRE, SANDERS & DEMPSEY L.L.P.

8000 TOWERS CRESCENT DRIVE

14TH FLOOR

VIENNA, VA 22182-6212

EXAMINER

LIU, HARRY K

ART UNIT

PAPER NUMBER

3662

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/573,914 | Applicant(s) MOILANEN ET AL. | |
| | Examiner HARRY LIU | Art Unit 3662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/09/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-44 and 47-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-44, 47-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed (12/09/2008). Claims (28-44, 47-57) are pending and an action on the merits is as follows.

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 28-30, 32-34, 38-42, 49, 52, 55-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Pitt (6650288).
2. Regarding claims 28, 30, 49, 52, 55-57, Pitt discloses a system for providing location assistance information to a mobile station of a communications network, the network element being configured to **estimate** visibilities of a plurality satellites based on **elevation angles** of the plurality of satellites (GDOP, Abstract) with respect to an estimated location of a mobile station (FIG. 2, assistance data is coming from base station which is the estimated location of a mobile in its serving radius); **obstruction in the vicinity** (which is obstruction of the base station where assistance information are collected) of the estimated location of the mobile select a group of said plurality of satellites with the best estimated visibilities with respect to the mobile station, **inherently** sending assistance message to mobile location assistance information relating to at least said group of satellites, wherein location information relating to said

group of satellites is sent in an order (preferred list) dependent on the estimated visibilities with respect to the mobile station. (col. 3, lines 22-35).

Regarding claim 29, Pitt discloses said group of satellites contains a predetermined number of satellites (col. 3, lines 11-21).

Regarding claim 32, Pitt discloses location assistance information relating to said group of satellites is sent in response to receipt of a location assistance information request from the mobile station. (col. 5, lines 21-26).

Regarding claim 34, Pitt discloses location the steps of selecting a further group of satellites with the next best estimated visibilities with respect to the mobile station (see FIG. 1 to FIG. 5).

Regarding claims 33, 40, Pitt discloses location assistance information relating to said group of satellites is sent periodically (col. 3, lines 22-35).

Regarding claims 38-39, 41, Pitt discloses location assistance information relating to said group of satellites is sent in response to receipt of a location assistance information **request** from the mobile station. (col. 5, lines 21-26).

Regarding claim 44, Pitt discloses said group of satellites contains three or four satellites of the satellite positioning system. (col. 3, lines 11-21).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 28, 30-31, 35-37, 42-43, 47-50, 52, 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt (6650288) in view of Carlsson (7009948).

Regarding claims 28, 30, 49, 52, 55-57, in the event if Pitt does not inherently disclose sending assistance message, it would have been obvious in view of Carlsson. Carlsson teaches the use of assistance message sending to mobile for helping position fix (col. 7, lines 31-52). It would have been obvious to modify Pitt with Carlsson by incorporating assistance message to send the **ordered** list of visible satellites to mobile in order to help mobile to get faster acquisition of satellite position information.

Regarding claims 31, 37, Pitt as modified with Carlsson does not specifically disclose location assistance information relating to said group of satellites is sent using a plurality of location assistance message, each location assistance message of said plurality of location assistance messages containing information about one satellite of said satellite positioning system. However, Carlsson teaches use of DCCH channel in delivering location assistance message (Fig. 3 to Fig. 9). It would have been obvious to further modify Pitt with Carlsson by incorporating DCCH channel for delivery assistance information in order to broadcast assistance message to all mobiles in the serving area. Note that use of broadcasting channel in delivering assistance data is better achieved with one satellite in one message; this way message will be limited in size to fit into DCCH channel.

Regarding claims 35-36, Pitt as modified with Carlsson does not specifically disclose location assistance information relating to said group of satellites is sent before

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further group of satellites. However, it is a common sense that more important information should be sent before less important one.

Regarding claim 42, Pitt as modified with Carlsson does not specifically disclose location assistance information relating to said further group of satellites is sent less often than said group. However, it is known that satellite list can vary pretty fast especially for moving mobile since it handoff to different cell often. By moving to a new cell means a different group of visible satellites will be provided. It would have been obvious to modify the list/algorithm to update the list of better visible satellites more often than less visible ones.

Regarding claim 43, Pitt as modified with Carlsson discloses the assistance message in an order dependent on visibility.

Regarding claims 47-48, Pitt as modified with Carlsson discloses the location assistance information is for mobile assisted or mobile-based depends on availability of satellites information.

Regarding claim 50, Pitt as modified with Carlsson discloses receiving of location assistance information relating to satellites of said system (base station provides list of visible satellites to mobile).

5. Claims 45-46, 51, 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt (6650288) in view of Carlsson (7009948), as applied to claim 28 rejection above and further in view of Sheynblat (6720915).

Regarding claim 45-46, Pitt as modified with Carlsson does not disclose the determination of visibility is based on elevation angles of the satellites. However

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Sheynblat teaches elevation of angles of the satellites in determining ordered list (col. 8, lines 25-67). It would have been obvious to further modify Pitt with Sheynblat by considering the elevation angles and obstruction in determining ordered list in order to further provide more environment orientated assistance information to mobile.

Regarding claim 51, 53-54, Pitt as modified with Carlsson does not disclose the network element is a location server or a number of network elements. However, Sheynblat teaches use of server to provide ordered set of satellites and use of a number of network elements (col. 3, lines 56-63, FIG. 1C). It would have been obvious to further modify Pitt with Sheynblat by incorporating server for saving the visible satellites information in order to centrally provide location assistance to all mobiles in the network.

Response to Arguments

Applicant argues for claims 28, 49, 52 and 55 that neither Pitt nor Carlsson discloses "estimating visibilities of a plurality of satellites based on elevation angles of the plurality of satellites with respect to an estimated location of a mobile station, said plurality of satellites being satellites of a satellite positioning system, wherein obstructions in the vicinity of the estimated location of the mobile station are taken into account in estimating the visibilities of the plurality of satellites with respect to the mobile station,".

While Pitt may not **directly disclose** obstructions in the vicinity of the estimated location of the mobile station are taken into account. This feature is implied since mobile communicates with base station, base station receives/collects satellite information.

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Visibility of mobile and base station should be closely matched/related. When a mobile has obstruction problem with environment, it is also affecting the cellular communication between mobile and BTS in addition to satellite information.

It is noted that applicant does not separately argue for the feature of other claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Applicant is recommended to further clarify the **factors of determining obstructions** in order to differentiate the immediate application to the prior arts used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Liu whose telephone number is 571-270-1338.

The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, please **leave a voice message** with application serial number and nature of call, a response within 24 hours can be expected during regular business days. Also, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-270-2338.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Harry Liu
Examiner, Art Unit 3662

February 10, 2009

/Thomas H. Tarcza/

Supervisory Patent Examiner, Art Unit 3662